

# Vydyne® R550HT BK02

polyamide 66



Vydyne R550HT BK02 is a 50% glass-filled, heat-stabilized PA66 based resin designed for injection molding applications. It was specifically developed to withstand long term exposure to elevated temperatures up to 190°C. R550HT BK02 offers improved flow with an improved black surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline.

## General

|                       |                                        |                                      |                             |
|-----------------------|----------------------------------------|--------------------------------------|-----------------------------|
| Regional Availability | • North America                        | • Europe                             | • Asia Pacific              |
| Additive              | • Heat Stabilizer                      | • Lubricant                          |                             |
| Features              | • Good Mold Release<br>• High Rigidity | • Heat Stabilized<br>• High Strength | • High Flow<br>• Lubricated |
| Agency Rating         | • ASTM, D6779 PA012G50                 |                                      |                             |
| UL File Number        | • E70062                               |                                      |                             |
| Appearance            | • Black                                |                                      |                             |
| Forms                 | • Pellets                              |                                      |                             |
| Processing Method     | • Injection Molding                    |                                      |                             |

## Physical

|                             | dry  | cond. | Unit              | Test Standard |
|-----------------------------|------|-------|-------------------|---------------|
| Density                     | 1.59 | -     | g/cm <sup>3</sup> | ISO 1183      |
| Molding Shrinkage           |      |       |                   | ISO 294-4     |
| Across Flow : 23°C, 2.00 mm | 0.8  | *     | %                 |               |
| Flow : 23°C, 2.00 mm        | 0.3  | *     | %                 |               |
| Water Absorption            |      |       |                   | ISO 62        |
| 23°C, 24 hr                 | 1.1  | *     | %                 |               |
| Equilibrium, 23°C, 50% RH   | 1.2  | *     | %                 |               |

## Mechanical

|                              | dry   | cond. | Unit | Test Standard |
|------------------------------|-------|-------|------|---------------|
| Tensile Modulus (23°C)       | 17000 | 12000 | MPa  | ISO 527-2     |
| Tensile Stress (Break, 23°C) | 230   | 161   | MPa  | ISO 527-2     |
| Tensile Strain (Break, 23°C) | 2.5   | 3.5   | %    | ISO 527-2     |
| Flexural Modulus (23°C)      | 15700 | 10500 | MPa  | ISO 178       |
| Flexural Strength (23°C)     | 350   | 215   | MPa  | ISO 178       |
| Poisson's Ratio (23°C)       | 0.4   |       | -    | ISO 527-2     |

## Impact

|                                | dry | cond. | Unit              | Test Standard |
|--------------------------------|-----|-------|-------------------|---------------|
| Charpy Notched Impact Strength |     |       |                   | ISO 179/1eA   |
| +23°C                          | 16  | 22    | kJ/m <sup>2</sup> |               |
| -30°C                          | 15  | 15    | kJ/m <sup>2</sup> |               |
| -40°C                          | 15  | 15    | kJ/m <sup>2</sup> |               |

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|                                  |     |     |       |             |
|----------------------------------|-----|-----|-------|-------------|
| Charpy Unnotched Impact Strength |     |     |       | ISO 179/1eU |
| +23°C                            | 97  | 120 | kJ/m² |             |
| -30°C                            | 110 | 100 | kJ/m² |             |
| -40°C                            | 100 | 100 | kJ/m² |             |

|                              |    |    |       |            |
|------------------------------|----|----|-------|------------|
| Notched Izod Impact Strength |    |    |       | ISO 180/1A |
| +23°C                        | 16 | 20 | kJ/m² |            |
| -30°C                        | 16 | 16 | kJ/m² |            |
| -40°C                        | 16 | 16 | kJ/m² |            |

| Thermal                     | dry | cond. | Unit | Test Standard |
|-----------------------------|-----|-------|------|---------------|
| Heat Deflection Temperature |     |       |      | ISO 75-2/A    |
| 1.80 MPa, Unannealed        | 246 | 239   | °C   |               |
| 0.45 MPa, Unannealed        | 256 | 253   | °C   |               |
| Melting Temperature         | 260 | *     | °C   | ISO 11357-3   |

| Electrical                    | dry | cond. | Unit  | Test Standard |
|-------------------------------|-----|-------|-------|---------------|
| Dielectric Strength (1.00 mm) | 29  | -     | kV/mm | IEC 60243     |

| Flammability          | Value | Unit   | Test Standard |
|-----------------------|-------|--------|---------------|
| Burning Rate, 2.00 mm |       | mm/min | ISO 3795      |

| Injection                     | Value     | Unit |
|-------------------------------|-----------|------|
| Drying Temperature            | 80        | °C   |
| Drying Time                   | 4         | h    |
| Rear Temperature              | 280 - 310 | °C   |
| Middle Temperature            | 280 - 310 | °C   |
| Front Temperature             | 280 - 310 | °C   |
| Nozzle temperature            | 280 - 310 | °C   |
| Processing (Melt) Temperature | 285 - 305 | °C   |
| Mold Temperature              | 65 - 95   | °C   |

